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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,931	09/22/2003	Gee-Sung Chae	041993-5233	5116

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EXAMINER

KIM, RICHARD H

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/664,931	Applicant(s) CHAE ET AL.	
	Examiner Richard H. Kim	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-14 and 71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-14 and 71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/28/06 has been entered.

### ***Claim Rejections - 35 USC § 112***

1. Claim 6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 claims that the Ti layer is on the semiconductor layer. However, the claim in which claim 6 depends on claims that the Ti layer is on the gate electrode or the source/drain electrode.
- 2.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US 5,349,205).

Kobayashi et al. discloses a device comprising a plurality of gate lines and data lines crossing each other to define a plurality of pixel regions; a plurality of thin film transistors (col. 3, line 43), each disposed in one of the pixel regions, each thin film transistor including: a gate electrode (2) on a first substrate, a gate insulating layer (4) over the first substrate, a semiconductor layer (5) on the gate insulating layer, and a passivation layer (3) over the first substrate including the source/drain electrodes of the thin film transistor; a plurality of pixel electrodes, each disposed in one of the pixel regions; and at least one metal masking Ti layer on at least one layer of the gate electrode, and the source/drain electrodes of the thin film transistors (col. 3, lines 59-63).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 8-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Kaneko et al. (US 6,422,842 B1).

Kobayashi et al. discloses the device previously recited, but fails to disclose a titanium oxide layer formed on at least the passivation layer, the pixel electrodes, in the thin film transistor or as a masking layer having hydrophilic properties.

Kaneko et al. discloses a device comprising a titanium oxide layer having hydrophilic properties (col. 8, lines 24-31).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a titanium oxide layer formed on at least the passivation layer, the pixel electrodes, in the thin film transistors or as a masking layer having hydrophilic properties since one would be motivated to utilize titanium oxide wherever etching is required in order to avoid local spotting of water and prevent an occurrence of disconnection due to failure to adhesion to resist (col. 8, lines 28-30).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al.

Kobayashi discloses the device previously recited, but fails to disclose a black matrix on the second substrate, a color filter on the second substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a black matrix on a second substrate, a color filter layer on the second substrate. Examiner take official notice that color filters and black matrices are well known to produce a color display and to reduce light leakage, respectively.

6. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Ha et al. (US 6,620,655 B2) and Fujikawa et al. (US 6,297,519).

Kobayashi et al. discloses the device previously recited, but fails to disclose that the metal masking layer includes Ti disposed on upper surfaces of a semiconductor layer and a gate electrode.

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Ha et al. discloses a device comprising a metal masking layer including TI disposed on a gate electrode a metal masking layer including TI disposed on an upper surface of a gate electrode (Fig. 8A, ref. 129b).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a metal masking layer including TI disposed on a gate electrode since one would be motivated to protect the gate electrode (col. 10, line 8).

Fujikawa et al. discloses a device wherein a metal masking layer including TI (15) is disposed on an upper surface of a semiconductor layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ metal masking layer including disposed on an upper surface of a semiconductor layer since one would be motivated to prevent element performance from being degraded by AL diffusion (col. 1, lines 58-60).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H. Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard H Kim  
Examiner  
Art Unit 2871

RHK

  
ANDREW SCHECHTER  
PRIMARY EXAMINER